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MEMORANDUM FOR: The Record

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Subject: Documentation of Updates to the Forms Printing and Distribution Operation

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This memorandum documents updates that have been made to the Forms Printing and Distribution (FPD) operation since the release of the Forms Printing and Distribution Detailed Operational Plan (DOP) on February 24, 2020. There were no significant architecture changes to the FPD operation. The COVID-19 pandemic did result in operational impacts, including printing production process changes, adjustments to mail schedules, and the addition of new mailings. These are impacts to the Design Assumptions, as shown in Section 2.5 of the DOP. The updates, summarized below, are provided to ensure accurate final documentation is available to the public.

- Self-Response Mailing 4 and 5 schedule finish dates were delayed approximately two weeks because of the COVID-19 pandemic. Printing production throughput was reduced, and FPD implemented a flow-based strategy to address and mail to the most-distant destinations first for each cohort.
- An additional mailing (postcard) was conducted targeting those households that receive mail at post office boxes only (completed July 10, 2020).
- The 2020 Census mail strategy¹ was updated to include two additional mailings.
 - A sixth mailing (reminder postcard) was added to the contact strategy for those housing units that had not yet responded by mid-July; in-home dates: July 22-28, 2020.
 - In mid-August, a seventh mailing (questionnaire package) was sent to nonresponding housing units in the lowest responding areas; in-home dates: August 23-September 15, 2020.

¹ The original 2020 Census mail strategy is included in the Internet Self-Response (ISR) DOP on page 25, and the updated mail strategy is included in the ISR DOP update document at: [Memorandum 2021.04: Documentation of Updates to the Internet Self-Response Operation \(census.gov\)](#).

- Other mailings supporting Nonresponse Followup (NRFU) and Update Leave (UL) were delayed to align with the extended field operations. These delays necessitated extending the main print vendor contract and facility leases until October 2020.
 - NRFU Administrative Records Postcards
 - NRFU Mailing 1 was rescheduled 20 days later; the new in-home date: June 8, 2020.
 - NRFU Mailings 2 through 7 were delayed 90 days; the new in-home dates: August 24–September 28, 2020.
 - NRFU Mailings 8 through 11 were removed because the NRFU duration was shortened.
 - UL Reminder Cards were rescheduled 90 days later; the new in-home date: July 17, 2020.
- Printing production process impacts resulting from the COVID crisis included:
 - The primary production facility for self-response mailings was temporarily shut down for deep cleanings and some staffing shortages.
 - Production staffing was reduced to allow for social distancing.
 - The postal barcode used to track mailpieces was moved from the address block in the open window and placed on the outside of the outgoing envelopes.
 - Print vendor oversight, monitoring, and reporting processes were modified. This activity is described in section 3.5 of the DOP. The print program leveraged its adaptability to transition from in-person to virtual reviews while continuing to maintain a high level of quality.

The 2020 Census Memorandum Series

The 2020 Census Memorandum Series documents significant decisions, actions, and accomplishments of the 2020 Census Program for the purpose of informing stakeholders, coordinating interdivisional efforts, and documenting important historical changes.

A memorandum generally will be added to this series for any decision or documentation that meets the following criteria:

1. A major program-level decision that will affect the overall design or have significant effect on 2020 Census operations or systems.
2. A major policy decision or change that will affect the overall design or significantly impact 2020 Census operations or systems.
3. A report that documents the research and testing for 2020 Census operations or systems.

Visit 2020 Census on [Census.gov](https://www.census.gov) to access the Memorandum Series, the 2020 Census Operational Plan, and other information about preparations for the 2020 Census.

2020 Census Detailed Operational Plan for: 9. Forms Printing and Distribution Operation (FPD)

A New Design for the 21st Century

Issued: February 24, 2020

Version: 1.0

Prepared by: Decennial Census Management Division



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Approvals

This FPD Detailed Operational Plan has been reviewed and approved for use.

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Document Change History

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1	v0.01	1/25/2017	Initial Working DRAFT Version from 2020 Census DOP template.
2	V0.02	1/26/2017	Incorporated comments from IPT.
3	V0.03	7/17/2017	Incorporated updated Data Collection IOD
4	V0.04	8/10/2017	MITRE updates to Data Collection IOD
5	V0.05	9/7/2017	MITRE updates to Data Collection IOD text
6	v1.0 Predecisional	10/20/2017	Review Version
7	v1.0 Final - Review	2/13/2019	DRAFT Version for Final Review
8	v1.0 Consistency Revisions	9/5/19	Updated IDEF0 to reflect changes in exchange names/descriptions from other DOPs.
9.	V1.0	2/24/20	Executive Review Complete, BPM baselined 5.0.

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1. Document Purpose

The 2020 Census Detailed Operational Plan for the Forms Printing and Distribution operation (FPD) is intended for use by U.S. Census Bureau managers, staff, contractors, and other internal and external stakeholders working on the 2020 Census. The document presents the detailed operational design for the 2020 Census FPD operation and includes a summary of the operational processes involved, their inputs, outputs, controls, and the basic mechanisms employed to conduct the operational work.

Anticipated uses of this document include the following:

- Communication – Documents operational design details for internal and external stakeholders.
- Planning – Documents planning assumptions and key milestones.
- Staffing – Documents staffing needs and strategies.
- Design – Describes operations and flows, which inform design of IT systems, manual processes, and training.
- Development – Identifies business rules and required capabilities to be developed.
- Testing – Provides a basis for developing integrated test plans for IT systems and processes.

This document complements the 2020 Census Operational Plan, which presents the 2020 Census operational design and covers all operations required to execute the 2020 Census, starting with precensus address and geographic feature updates and ending once census data products are disseminated and coverage and quality are measured.

This document will be updated over time to reflect changes in strategies that result from 2020 Census planning, research, and testing activities.

2. Operational Overview

2.1 Operation Purpose

The Forms Printing and Distribution operation (FPD) prints and distributes the following paper forms to support the 2020 Census mailing strategy and enumeration of the population:

- Internet invitation letters.
- Reminder cards or letters or both.
- Questionnaire mailing packages.
- Materials for other special operations, as required.

Other materials required to support field operations are handled in the Decennial Logistics Management operation (DLM).

2.2 Background

The FPD operation prints and distributes printed materials to support the 2020 Census mailing strategy and enumeration of the population. For the 2020 Census, the contact strategy will include a questionnaire mailing to all households in the mail universe that do not respond to the initial mailing.

Census Tests conducted from 2012 through 2015 answered specific research questions allowing the Census Bureau to make decisions on important aspects of the operational design for the four key innovation areas: 1) Optimizing Self-Response (OSR), 2) Reengineering Field Operations, 3) Utilizing Administrative Records, and 4) Reengineering Address Canvassing.

2016 Census Test

Starting in 2016, the focus shifted to validating and refining the design by testing the interactions across selected operations and determining the proposed methodology for those operations at the same time, testing of production systems began.

The 2016 Census Test OSR activities included refining contact strategies, providing language support, and improving questionnaire content. Since the Census Bureau will make an effort to increase response via the internet, it must test to determine the internet usage and the processing of responses without Census-issued identification (ID) numbers (Non-ID processing).

The 2016 Census Test focused on improving the efficiency of Nonresponse Followup (NRFU) by including the use of administrative records and technological and operational improvements.

The 2016 Census Test included mailing questionnaires to all nonresponding households in a single mailing (4th contact). This was a significant change to the approach for providing paper questionnaires to nonresponding households, which in prior Censuses was limited to about 20 percent of those who did not respond.

Starting with the 2016 Census Test, the FPD operation accelerated the print acquisition schedule to better align with the necessary security approval processes.

2017 Census Test

The 2017 Census Test examined how people responded to a question to obtain data on tribal enrollment, using panels on the internet and paper questionnaires (with the telephone data collection operation using the internet panels).

Additionally, this test supported continued refinement of methods to process self-responses submitted without a unique Census Bureau-provided identification code (for the operation called Non-ID Processing). The option to respond using the internet instrument without an ID represented a giant leap in convenience to the respondent in support of a “respond nearly anywhere, anytime,” approach for 2020. In prior censuses, a respondent would have needed to obtain a blank “Be Counted” form from a Questionnaire Assistance Center to self-respond without having a Census ID.

The FPD operation further refined the acquisition timing to include an initial security review as a component of an award determination. Six weeks were added to the schedule to allow for the review of the vendor-submitted security package after the bid opening date but prior to the official award date of the contract.

2018 End-to-End Census Test

The 2018 End-to-End Census Test (2018 E2E CT) focused on confirming the overall integrity of the operational design. Additionally, the 2018 E2E CT introduced enterprise systems that were not used in earlier census tests, expanded systems already in use, and enhanced systems using cloud technologies.

The 2018 End-to-End Census Test objectives were to:

- Validate that the operations in-scope for the test were ready to go into production for the 2020 Census.
- Test and validate major operational threads, procedures, systems, and infrastructure together to ensure proper integration and conformance with requirements.
- Produce prototypes of geographic and data products.

The 2018 End-to-End Census Test included aspects of all four key innovation areas. The innovation area directly related to the FPD operation is Optimizing Self-Response.

Optimizing Self-Response has the goal of generating the largest possible self-response, reducing the need to conduct expensive in-person follow-up with those households. This innovation area strives to make it easy for people to respond from nearly any location at any time by:

- Enabling people to respond by multiple modes: internet, paper, or telephone.
- Allowing respondents to submit a questionnaire without a unique Census-assigned user ID.
- Providing online questionnaires in multiple languages.

For this innovation area to be successful, respondents must know that their personal information is protected. Thus, a key element of this innovation area is to assure respondents that their data are secure and treated as confidential.

The FPD operation leveraged the 2018 End-to-End (E2E) Census Test (CT) to test requirements for the 2020 Census. The technical challenge tested by FPD during the 2018 E2E CT was how to link the addresses printed onto premade mail packages containing a questionnaire to the questionnaire's serialized data capture routing barcode.

2.3 Design Overview

The sections below present the high-level design for the FPD operation. Please refer to the 2020 Census Operational Plan for a complete inventory of design decisions for all 2020 Census operations.

2.3.1 High-Level Operational Design

The design of the FPD operation for the 2020 Census includes five major operational activity areas:

- FPD Planning and Preparation.
- Form Design and Address Data File Processing.
- Printing/Mailing.
- Printing Only.
- Oversight, Monitoring, and Reporting.

Each of these major activity areas is summarized below. Together, these activities represent the complete set of work that needs to be performed to conduct this operation.

FPD Planning and Preparation

Planning encompasses many activities, including: working with the Government Publishing Office (GPO) to determine the Acquisition Strategy; defining in contract terms the technical requirements for print quality, assembly, and distribution; incorporating operational milestones into print delivery requirements; establishing the external government agency print-related interfaces with GPO and the United States Postal Service (USPS).

Form Design and Address Data File Processing

Print files are created by the Content and Forms Design operation (CFD) and sent to the print vendor as specified in the print contract terms. The vendor is required to provide proofs for review of census design prior to any print production. Address files for mailing will be transmitted to the print vendor. The print vendor must process the address file to sort the addresses for postal delivery.

Printing/Mailing

The vendor prints, finishes, and assembles all mail materials using appropriate methods to meet quality, quantity, and schedule requirements. Addressing, using variable imaging, is performed in conjunction with the static printing or performed separately depending on product and schedule constraints.

Printing Only

Questionnaires and related materials supporting self-response will be printed and mailed directly to respondents, while materials for Group Quarters, Update Enumerate, and other field operations will be printed and delivered in bulk to the operation.

Oversight, Monitoring, and Reporting

At the beginning of a print production run, the Government Publishing Office attends a Press Sheet Inspection (PSI) for the purposes of approving the material to be printed. Once the vendor has received sign-off from GPO, the attributes are set and the vendor must continue to meet the quality and other attributes designated by GPO. After the PSI is complete, ongoing monitoring of quality is provided by Census Bureau staff.

The Census Bureau sends staff to vendor facilities for oversight and monitoring of quality and adherence to requirements. The vendor is required to report progress against plan and meet deadlines for major print operation phases.

The full hierarchy of activities for the FPD operation is provided in [Appendix C](#) in the form of an Activity Tree. In the Activity Tree, each major operational activity area listed above is numbered and then decomposed into a numbered set of subactivities, some of which are further decomposed into more detailed numbered subactivities or steps.

For a full description of the operational subactivities that comprise the FPD operation, see the Detailed Process Description discussions in Section 3 below.

2.3.2 FPD Operational Context

The FPD operational activities described above are conducted within the context of other 2020 Census operations and other programs or data sources that are external to the 2020 Census Program. One way to depict an operational context is by using a “Context Diagram,” which shows the boundary of the operational process, the operational activities it contains, and the information exchanged with its neighbor operations (or other entities), as well as the resources (mechanisms) needed to conduct the operational work.

[Figure 1](#) is a top-level context diagram for the FPD operation represented as an Integrated Definition, Level 0 (IDEF0) model. An IDEF0 model of a process (or operation) shows the Inputs, Controls, Outputs, and Mechanisms of the process. These IDEF0 model elements are summarized below and described further in the sections that follow.

The yellow box in the center of the IDEF0 model lists the major operational activity areas for the operation, numbered as given in the Activity Tree for Forms Printing and Distribution Operation (FPD) in [Appendix C](#). Specific Information Exchanges (IEs) are shown in different colored boxes to represent the Inputs (green boxes on left side), Outputs (orange boxes on right side), Controls (purple boxes on top), and Mechanisms (blue boxes on the bottom). Boxes to the left of the Inputs indicate the *Provider* of the inputs to the operation (typically another 2020 Census operation or an external source). The Provider of the Controls is noted in the box itself. Boxes to the right of the Outputs indicate the *Receiver* of the outputs (typically another 2020 Census operation or external entity). Each Information Exchange has a name and a unique number for identification purposes.

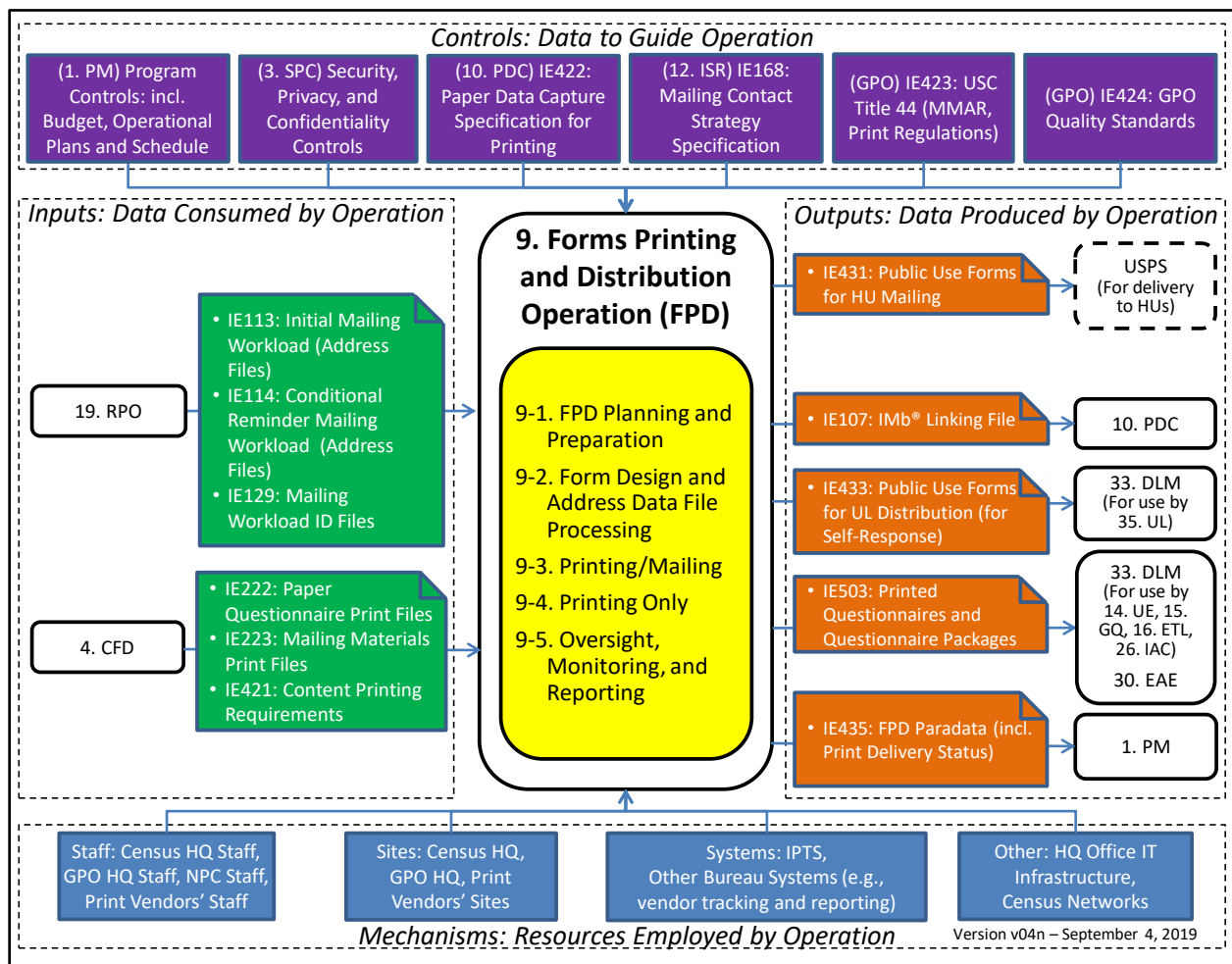


Figure 1: Forms Printing and Distribution Operation (FPD) Context Diagram

The printing operations are an important aspect of conducting the census, as the primary means of contacting U.S. residents to encourage internet response to the census or, alternatively, to provide a paper questionnaire. Census utilizes the GPO to acquire and support the necessary contracts to print, finish, assemble, and distribute invitations or reminders for internet response and paper questionnaires. The distribution is primarily by USPS mail but also includes materials distributed through Census Bureau field operations. For detailed descriptions of the Inputs, Controls, Outputs, and Mechanisms used by the FPD operation, see the sections that follow.

2.3.2.1 FPD Operational Inputs

Inputs are the data that are consumed by the operation. The inputs initiate the operational work that needs to be performed.

Table 1 lists the inputs to the FPD operation.

Table 1: FPD Operational Inputs

Provider	Information Exchange	Description
19. Response Processing Operation (RPO)	IE113: Initial Mailing Workload (Address Files)	The set of addresses that are to be mailed 2020 Census materials for data collection. This includes all addresses in the Self-Response Type of Enumeration Area (TEA). The workload includes identification of the timing and type of paper material (letter, questionnaire, language, etc.) to be included in the mailing for each address.
19. Response Processing Operation (RPO)	IE114: Conditional Reminder Mailing Workload (Address Files)	The set of nonresponding addresses in the Self-Response TEA and mailable addresses in the Update Leave (UL) TEA that are to be mailed reminders and other materials during data collection. The workload includes identification of the timing and type of paper material (letter, questionnaire, language, etc.) to be included in the mailing for each address.
19. Response Processing Operation (RPO)	IE129: Mailing Workload ID Files	The mailable items for the Self-Response and UL TEAs will contain case IDs (Census IDs or Document IDs) that the respondent can use for internet or telephone self-response. RPO provides these IDs to FPD for use in printing these items.

Provider	Information Exchange	Description
4. Content and Forms Design operation (CFD)	IE222: Paper Questionnaire Print Files	Print files for the paper questionnaires.
4. Content and Forms Design operation (CFD)	IE223: Mailing Materials Print Files	Print files for the nonquestionnaire paper materials to be mailed or distributed to support enumeration activities.
4. Content and Forms Design operation (CFD)	IE421: Content Printing Requirements	A list of the different types of forms to print (e.g., questionnaires, letters, cards, and envelopes) and requirements for each, to include size, color, paper stock, etc.

2.3.2.2 FPD Operational Controls

Controls are the data that guide the behavior of the operation. They are not consumed by the operation, but rather they provide guidance, models, limits, criteria, cutoff dates, or other information that governs the way in which the operational work is performed.

Table 2 lists the controls for the FPD operation.

Table 2: FPD Operational Controls

Provider	Information Exchange	Description
1. Program Management operation (PM)	Program Controls	Program control information including: <ul style="list-style-type: none"> Budget. Operational plans and schedule.

Provider	Information Exchange	Description
3. Security, Privacy, and Confidentiality operation (SPC)	Security, Privacy, and Confidentiality Controls	Laws, policies, regulations, and guidelines related to physical security, Information Technology (IT) security, data security, and privacy and confidentiality impacts, analyses, and processes. These include but are not limited to Title 13, Title 26, and other laws and policies related to protection of personally identifiable information.
10. Paper Data Capture operation (PDC)	IE422: Paper Data Capture Specification for Printing	Data capture requirements include color definition and tolerances, margins, quality of imaging, and paper attributes that are defined in the print solicitation which become contract terms.

Provider	Information Exchange	Description
12. Internet Self-Response operation (ISR)	IE168: Mailing Contact Strategy Specification	<p>Business rules that define the sequence and timing of materials to be mailed to housing units inviting and reminding people to respond. The contact strategy rules are designed to encourage self-response via the internet.</p> <p>These rules also apply to additional mailings sent to nonresponding housing units.</p> <p>During pre-data collection, these rules are used by RPO to create the initial mailing workload for the Self-Response TEA.</p> <p>During data collection, these rules are used by Response Processing Operation (RPO) to create the conditional mailing workload for Self-Response and UL TEAs based on response and housing unit status.</p>
Government Publishing Office (GPO)	IE423: United States Code (USC) Title 44 (Materials Management Acquisition Regulation [MMAR], Print Regulations)	<p>The United States GPO is the organization that procures customized print products for federal government agencies. Title 44 of the U.S. Code requires GPO to be the centralized resource for gathering, cataloging, producing, providing, authenticating and preserving published information. The MMAR provides the policies and procedures necessary to conduct GPO procurements.</p>

Provider	Information Exchange	Description
GPO	IE424: GPO Quality Standards	GPO enhances contract specification with GPO Contract Terms, which deal with print quality on a general level and detailed requirements through the Quality Assurance Through Attributes Program. (GPO Publication 310.1)

2.3.2.3 FPD Operational Outputs

Outputs are the data produced by the operation. The outputs constitute the results of operational work that has been performed. Outputs produced may be used as inputs or controls to other operations.

Table 3 lists the outputs from the FPD operation.

Table 3: FPD Operational Outputs

Consumer	Information Exchange	Description
United States Postal Service (USPS) (for Delivery to Housing Units [HUs])	IE431: Public Use Forms for HU Mailing	Paper forms to support the 2020 Census mailing strategy and enumeration of population including: internet invitation letters, reminder cards or letters or both, questionnaire mailing packages, and materials for other special operations.

Consumer	Information Exchange	Description
9. Paper Data Capture operation (PDC)	IE107: Intelligent Mail Barcode (IMb®) Linking File	Results of the Printer/Mailer contractor arrangements with USPS to deliver mailing items. Each mailing item (package, letter, or postcard) will have an IMb® barcode for postal tracing. PDC will need to know what IMb® code (and corresponding Census ID) is associated with each item that is sent from FPD and returned from respondents to PDC. This information will also be used to identify USPS Undeliverable As Addressed mailing items.
33. Decennial Logistics Management operation (DLM) (For use by 35. Update Leave operation [UL])	IE433: Public Use Forms for UL Distribution	Paper questionnaires that are left by the UL operation at identified Housing Units to allow occupants to self-respond.

Consumer	Information Exchange	Description
<p>33. Decennial Logistics Management operation (DLM)</p> <p>(For use by 14. Update Enumerate operation [UE], 15. Group Quarters operation [GQ], 16. Enumeration at Transitory Locations operation [ETL], 26. Island Areas Censuses operation [IAC])</p> <p>30. Evaluations and Experiments operation (EAE)</p>	IE503: Printed Questionnaires and Questionnaire Packages	<p>Printed materials needed in support of other field data collection operational activities, e.g., questionnaires and associated materials that are left by the GQ operation or other operations.</p> <p>Questionnaires and other materials used by EAE for experimental mailing purposes.</p>
1. Program Management operation (PM)	IE435: FPD Paradata (incl. Print Delivery Status)	Status and progress information related to FPD operational activities.

2.3.2.4 FPD Operational Mechanisms

Mechanisms are the resources (people, places, and things) that are used to perform the operational processes. They include staff resources, infrastructure sites, systems, and other technology infrastructure.

Staff Resources

Table 4 identifies the staff resources employed for the FPD operation.

Table 4: Staff Resources Used Within FPD Operational Activities

Staff Resources	Description/Role
Census Headquarters (HQ) Staff	Census HQ staff to manage the FPD operation and coordinate activities with Government Publishing Office (GPO) staff, National Processing Center (NPC) staff, and print vendors' staff.
Government Publishing Office (GPO) Staff	GPO staff to manage printing and mailing contracts.
NPC Staff	FPD utilizes the skilled resources of the NPC's Statistical Methods and Quality Assurance Branch, Quality Assurance Processing Section to oversee and validate the mandated vendor quality control processes at the print vendor facilities.
Print Vendors' Staff	The staff employed by print vendors and their subcontractors who provide printing and mailing support for the 2020 Census.

Infrastructure Sites

Table 5 identifies the infrastructure sites employed for the FPD operation.

Table 5: Infrastructure Sites for FPD Operational Activities

Infrastructure Site	Description/Role
Census HQ	Census HQ Site for office work conducted in support of the FPD operation. This permanent site in Suitland, Maryland, manages the operation throughout the country.
GPO HQ	GPO HQ Site for office work conducted in support of the FPD operation.
Print Vendors' Sites	Sites for print vendors' staff to perform printing and mailing activities to support the 2020 Census.

Systems and Other Technology Infrastructure

Table 6 identifies the systems employed for the FPD operation.

Table 6: Systems Used Within FPD Operational Activities

System	Description
IMb (Intelligent Mail® barcode) Postal Tracking System (IPTS)	IPTS is a Census Bureau system housed at NPC and used to ingest data from the USPS IMb Tracing® service. The system generates records for each mail piece when it is processed through an automated sort. These events can be correlated to an expected delivery date of outbound mail or business reply mail entering or making its way to a data capture facility and can be used to inform PDC of pending arrival of returned Census paper questionnaires.
Other Bureau Systems (e.g., vendor tracking and reporting)	FPD will develop appropriate reports to status the vendors' progress against their production and quality plans.

Other technology infrastructure employed for the FPD operation includes:

- HQ Office Information Technology (IT) infrastructure for conducting FPD operational work.
- Census network connectivity for data transmission between operational systems and operational sites.

2.4 FPD Data Flow and Operational Influences

Figure 2 is an Integrated Operations Diagram (IOD), which describes the design concepts for the response data collection operations for the 2020 Census (stateside and Puerto Rico). This diagram assumes that the frame has been developed and address canvassing operations are complete. The diagram shows the Response Processing Operation (RPO) as the hub of data collection and RPO's interactions with all the other 2020 Census operations that have a role in

data collection. The discussion below walks the reader through the diagram, using the circled numbers to help the reader follow the flow.

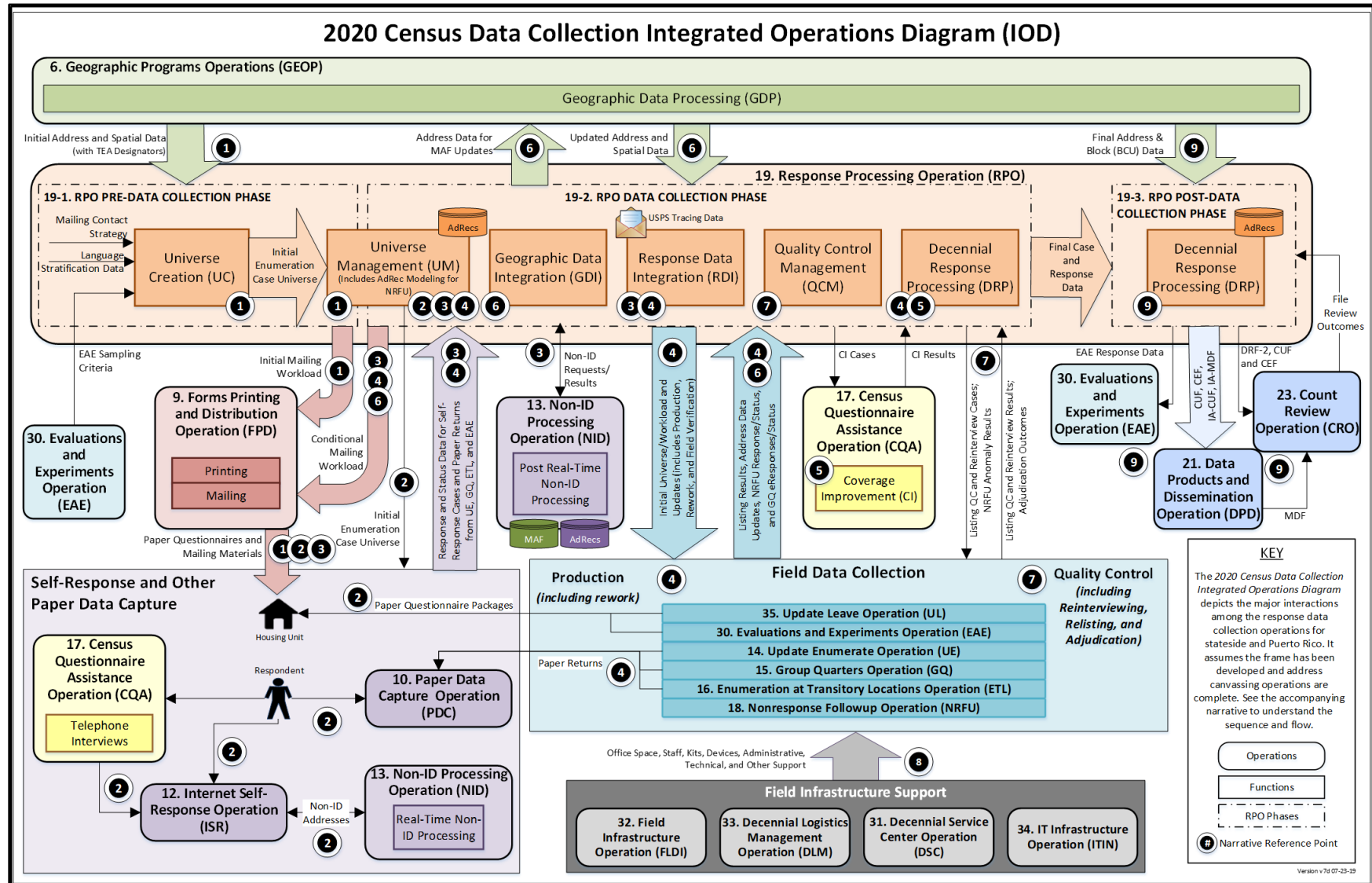


Figure 2: 2020 Census Data Collection - Integrated Operations Diagram (IOD)

Pre-Data Collection

1 Before the start of data collection, the Geographic Data Processing (GDP) component of the Geographic Programs operation (GEOP) sends initial Address and Spatial Data, including the Type of Enumeration Area (TEA) designations, to RPO so it can create the Initial Enumeration Case Universe. RPO also receives the mailing contact strategy (i.e., strategy for self-response stratification) so it can identify which housing units receive which kinds of mailings, language stratification information so it knows which language to use, and experimentation stratification data so it knows which housing units are to be included in what types of experiments. The creation of the Initial Enumeration Case Universe and application of the stratification data are done as part of the RPO Universe Creation function.

Based on the stratifications, the RPO Universe Management function creates the initial mailing workload and sends it to the Forms Printing and Distribution operation (FPD), which prints and then mails the appropriate materials to mailable housing units for the Self-Response (SR) TEA. The first two of the five potential mailings for the SR TEA are sent unconditionally to all housing units in this TEA. These mailings are sent in English or English and Spanish based on the language stratification data and may include letters or—based on the self-response panel—questionnaires.

During Data Collection

2 Once the RPO Universe Creation work is complete, the Initial Enumeration Case Universe is managed by the RPO Universe Management function, which tracks changes to the enumeration universe for future mailings and for the data collection operations.

People living in housing units are encouraged to self-respond through a partnership and communications campaign (not shown on this diagram), through mailings sent by FPD, and through paper questionnaires left at housing units as part of the Update Leave operation (UL).

To make it easy for people to respond and to reduce the paper workload, the Census Bureau is using an *Internet First* strategy for most housing units. Respondents can go to the internet and enter their response using the internet instrument as part of the Internet Self-Response operation (ISR). The internet option offers additional flexibility and allows people to respond in multiple languages. If a respondent calls the Census Questionnaire Assistance operation (CQA), a customer service representative may offer to collect the respondent's information by telephone. The information collected from these telephone interviews is entered by a customer

service representative using an instrument similar to the public-facing ISR instrument used by respondents.

Respondents can also mail paper questionnaire forms. These forms are received by the Paper Data Capture operation (PDC), which uses scanning and imaging technology to capture the information from these forms.

ISR receives the Initial Enumeration Case Universe from the RPO Universe Management function and uses the Enumeration Case Universe to link responses provided through the internet instrument to the appropriate case. If respondents do not have their unique Census ID available, they are still able to complete the census questionnaire as a Non-ID response using the ISR instrument. The Non-ID Processing operation (NID) first attempts to match the address entered by the respondent or customer service representative to a known census address in real time. For addresses that do not match, the response is still collected and is subject to later Non-ID processing.



Response and status data collected through the various self-response data collection operations are sent (in digital format) to RPO's Response Data Integration function. Any responses collected through PDC or ISR that are submitted in languages other than English or Spanish are translated by staff at the Tucson call center on behalf of these operations before being sent to RPO. RPO's Universe Management function uses the response status data to determine the appropriate actions for the case.

During the self-response data collection time period, reminder mailings are sent to housing units in the SR TEA. The first reminder is sent to all housing units in the SR TEA using the initial mailing workload as discussed above. Subsequent reminders are conditional and are only sent to those housing units that have not yet responded. The RPO Universe Management function sends a Conditional Mailing Workload to the FPD operation for these nonresponding units. FPD also receives from the RPO Universe Management function a list of mailable housing units in the UL TEA and mails two reminders to these housing units.

Any remaining Non-ID cases are sent by RPO to NID for post real-time Non-ID processing, which attempts to match addresses provided by respondents to known addresses in the Master Address File (MAF) using automated and clerical procedures. As needed, administrative records (AdRecs) are used to supplement the matching process. Most of these Non-ID cases will be from internet responses that could not be matched during real-time Non-ID processing. In addition, post data capture Non-ID processing will be required for paper forms for which the Census ID could not be read during data capture. The results of post real-time Non-ID matching

are sent back to RPO. Based on predefined business rules, some of the responses that are not able to be matched through NID are sent to the field for verification as part of the Nonresponse Followup operation (NRFU).



The discussion above covers self-responses for people living in housing units. Special operations also exist to collect data from people living in other types of living quarters or for whom self-response is not a viable option:

- The Group Quarters operation (GQ) enumerates people living in group quarters (e.g., dormitories, correctional facilities, and nursing/skilled-nursing facilities) as well as people experiencing homelessness and receiving services at service-based locations such as soup kitchens. GQ also enumerates people living on maritime and military vessels and living in group quarters on military bases and other military installations using specialized procedures.
- The Enumeration at Transitory Locations operation (ETL) enumerates people who are living in special locations such as recreational vehicle parks, campgrounds, racetracks, circuses, carnivals, marinas, hotels, and motels and who do not have a Usual Home Elsewhere.
- The Update Enumerate operation (UE) lists and enumerates housing units in areas that pose unique challenges to the standard self-response data collection operations. These housing units are in the UE and Remote Alaska TEAs, which cover remote areas of the country and other small selected areas.

NRFU is another special operation whose primary purposes are to determine the housing unit status of addresses in the SR and UL TEAs for which a self-response was not received and to enumerate those that are believed to be occupied. As mentioned in number 3 above, NRFU also performs a field verification activity to verify selected addresses for Non-ID self-responses that could not be matched to known addresses through NID.

Based on the universe case type (derived from TEA and living quarter type), RPO sends the Initial Enumeration Case Universe/Workload to the GQ, ETL, and UE operations. GQ uses this universe to perform an advance contact activity to collect general information and determine the preferred method of enumeration. ETL also performs an advance contact activity to schedule appointments for enumerating its universe of cases.

NRFU does not require advance contact activities. For NRFU, the RPO Universe Management function creates an Initial Case Universe/Workload comprising all housing units in the SR and UL

TEAs for which a self-response was not received. The NRFU contact strategy is dependent on the results of an AdRec modeling activity. Four possible status outcomes result from this modeling for a given address:

- AdRec Vacant: No one lives there.
- AdRec Delete: There is no housing unit at that address.
- AdRec Occupied: There is a high probability that someone lives there and that the Census Bureau has high-quality data about that housing unit.
- AdRec No Determination: Administrative data are not sufficient to help determine the housing unit status, and a full contact strategy is required.

An initial attempt to enumerate is made for all addresses in the NRFU workload. NRFU sends to RPO information regarding the success of this and any subsequent enumeration attempts as part of the response status data.

AdRec Vacant and AdRec Delete housing units also receive an additional mailing from FPD. The RPO Universe Management function provides this additional mailing workload to FPD (as another type of Conditional Mailing).

RPO removes from the follow-up workload any AdRec Occupied cases that cannot be successfully resolved during the first attempt and triggers one final mailing (from FPD) to these addresses to encourage these households to self-respond. RPO also removes AdRec Vacant and AdRec Delete cases that cannot be successfully resolved during this first attempt, provided that those cases do not appear occupied and that information from the United States Postal Service (USPS) about the additional mailing indicates that the unit is either vacant or nonexistent. For all other cases, NRFU continues to attempt to enumerate the housing unit until the attempt is successful or the maximum number of attempts has been reached. Additional attempts are made for selected units during the NRFU Closeout phase based on a reassessment of the AdRec modeling results using a relaxed, lower quality threshold.

Self-responses can continue to arrive at any time during NRFU. Accordingly, RPO flags housing units in the follow-up workload for which RPO has received a self-response or tracing information from the USPS that indicates that a return is on its way to one of the paper data capture facilities. NRFU is notified about these flagged households as soon as the information is available so that it can remove the housing units from the daily workload, if possible. Any self-responses that are flagged but later found by RPO to have insufficient enumeration data are added back to the NRFU workload for continued enumeration attempts. The RPO Universe Management function tracks this information and uses it to determine what to include in the

next day's follow-up workload. Housing units that have been successfully enumerated are not included in subsequent follow-up workloads.

For NRFU, field data are collected by electronic devices. The electronic data are sent to the RPO Response Data Integration function, which subsequently provides this information to the Decennial Response Processing function for further processing. Paper questionnaires are used to enumerate at living quarters during UE and at housing units during ETL. These paper questionnaires are checked-in at area census offices (ACOs) and then sent to the paper data capture facilities, where they are scanned and imaged by PDC. PDC sends the captured data and case status information to RPO in digital format.


GQ is primarily a paper operation. Group quarter responses collected on paper questionnaires are checked-in at the ACOs and sent to PDC for scanning and imaging before being transmitted to RPO. Case status updates are sent to RPO as part of the check-in process. GQ data provided in electronic files (eResponses) require additional processing to prepare the data before they are electronically transmitted to RPO. GQ data collected on paper rosters are entered by ACO clerks into the same file format that is used for eResponses. These response data are then sent electronically to RPO.

As part of the Evaluations and Experiments operation (EAE), the Census Bureau may test different questionnaire content and data collection methodologies during the 2020 Census to help evaluate content and modes for the 2020 Census and inform design changes for the 2030 Census. Addresses that are selected to be part of these experiments are identified in the initial universe (see number 1 above). For those addresses, the EAE operation sends households questionnaires with various experimental items, packaging, etc. to assess the impact made on the response or lack thereof. Respondents receiving EAE questionnaires and notices will respond via ISR, CQA, PDC or NRFU.




RPO's Decennial Response Processing function performs quality assurance activities as well as coding and other preparation steps on incoming response data

The RPO Universe Management function also supports a Coverage Improvement (CI) activity, the goal of which is to ensure a high-quality census by conducting telephone followup for households where there could be coverage issues on submitted responses. CI is a followup activity and is therefore considered a component of NRFU; however, the CI telephone interviews are performed by CQA. CQA receives from the RPO Universe Management function a set of cases with potential coverage issues and provides the results of these cases back to RPO's Response Data Integration function.

 As noted above, universe and address updates occur during field operations. Census Bureau field staff may uncover changes to addresses as they perform their daily assignments in any field operation. For example, a UL or UE lister may add an address or find an error in the address or geographic data based on the listing activities, or a NRFU enumerator or a UL lister may go to an address and find an additional unit such as a garage apartment located on the premises. All listing results and other address changes are sent to the RPO Geographic Data Integration function, which passes the information on to the GDP function in GEOP.

Changes to the address list may also come from other sources such as appeals from the Local Update of Census Addresses operation (LUCA), the review of addresses performed by the Count Review Operation (CRO), and updated files from the postal service. The GDP function within GEOP updates the address data and sends these to RPO's Universe Management Function, which provides these cases to the appropriate operation. Depending on the timing, living quarter type, and TEA designation, RPO may initiate one or more mailings to these new addresses through FPD to encourage self-response.

 All field operations (GQ, UL, ETL, UE, and NRFU) include quality control (QC) functions.

For GQ, the field operational control system creates a sample of the field enumeration cases for QC by ACO staff, who conduct telephone reinterviews for this sample set of cases to confirm that a GQ enumerator visited the site and that the total population count is correct.

For UL, the RPO Quality Control Management function selects a sample set of basic collection units (BCUs) for relisting. The QC Listing Results are sent back to the RPO Quality Control Management function for further processing. RPO does not send any changes resulting from UL listing to GEOP until the lister has passed the QC check. Further, if the QC activities result in a hard fail, BCUs already worked may require relisting. RPO includes this rework in subsequent UL production workloads.

QC methods for ETL and UE are performed primarily in the field, tailored to meet the circumstances of these unique paper-based operations.

NRFU includes multiple methods for ensuring high-quality data collection. Several of these are integrated into the staff management activities. In addition, samples of field followup cases are selected for reinterview (RI), a process whereby the response data are collected again and compared with the original collected data. The RPO Quality Control Management function creates the RI workload and sends it to the NRFU operation. The RI cases are handled by NRFU field staff. The RI results are sent to the RPO Quality Control Management function, which

performs an automated comparison of the RI data against the original data. Anomalies are sent back to NRFU, where additional research is conducted to determine how these cases should be handled. The results of this review (adjudication outcomes) are sent back to the RPO Quality Control Management function. In some cases, the adjudication requires that prior cases performed by the enumerator at fault be reworked. RPO puts these cases back into the NRFU workload as appropriate.



NRFU, UE, UL, ETL, and parts of the GQ operation are performed in the field. Several operations provide the support for these field data collection activities. The Field Infrastructure operation (FLDI) recruits, hires, onboards, and trains the staff needed to conduct these operations and also operates the field offices during production. The Decennial Logistics Management operation (DLM) provides the space and logistics support (e.g., supplies and kits) for the offices and the field staff. The Decennial Service Center operation (DSC) provides technical support for field and field office staff. Finally, the IT Infrastructure operation (ITIN) provides the hardware and software used by the field staff and field offices.

Post-Data Collection



Once data collection is complete, additional processing occurs to prepare the counts for use in apportionment and the data used by the Data Products and Dissemination operation (DPD) to create data products for redistricting and other purposes. The RPO Decennial Response Processing function handles this post-data collection processing, which includes multiple activities:

- Supplementing response data with administrative records for those cases that had been identified as AdRec Occupied but for which a nonresponse followup attempt was unsuccessful and no subsequent self-response was received.
- Determining the final enumeration universe by reconciling or applying final address and block data from the GDP component of GEOP.
- Determining the returns of record for situations where multiple responses have been received for the same housing unit.
- Performing count and status imputations.
- Performing consistency editing and characteristic allocation supplemented with administrative records data.
- Applying tabulation geography.

- Performing disclosure avoidance (Note: This is done by RPO for Island Areas Censuses data only. Disclosure avoidance for stateside/PR data is handled by DPD).

Similar processing occurs for responses from group quarters. Responses collected through the EAE operation may require slightly different activities.

Through these processing activities, the RPO Decennial Response Processing function creates multiple files for Stateside/PR response data, including the Decennial Response File (DRF), the Census Unedited File (CUF), and the Census Edited File (CEF). RPO also creates an Island Areas CUF (IA-CUF), Island Areas CEF (IA-CEF), and Island Areas Microdata Detail Files (IA-MDF) for the Island Areas Censuses (IAC) response data. Each of these files is reviewed within the Census Bureau before the data are sent to the next stage of processing. Some of these reviews are done as part of the CRO. The CUF, the CEF, the IA-CUF, and the IA-MDF are sent to DPD via the Census Data Lake (CDL). DPD uses these files as inputs for data products creation and also creates the Stateside/PR MDFs using the CEF as input. RPO also sends data collected as part of EAE back to the EAE operation for further analysis.

2.5 FPD Design Assumptions

FPD will support a mail strategy that will contact most households (the mail universe) up to five times. The third through fifth contacts will be conditional, removing responding households and addresses that were undeliverable in previous attempts from subsequent mailings. The contact materials will include invitations to respond online; reminder letters and postcards; paper questionnaires; and “It’s not too late” reminders. Additional contacts may support the Nonresponse Followup and Update Leave operations.

The fourth contact (conducted over about seven days) will require the addressing and mailing of questionnaire packages to all households that have not yet responded. The workload assumptions are included in the 2020 Census Life-Cycle Cost Estimate.

FPD will support other operations such as Group Quarters by printing questionnaires and related materials in bulk and delivering them for use by the operations.

3. Forms Printing and Distribution Operation (FPD) Detailed Process Description

Figure 3 is a top-level Business Process Model (BPM) showing the Level 1 activity areas within the FPD operation. BPMs for the 2020 Census follow industry-standard Business Process Model and Notation (BPMN). An explanation of how to read the BPMN notations and a full-sized copy of all of the BPMN diagrams for this operation are provided under separate cover.

This top-level BPM serves as the Context Model for the FPD operation. A BPMN Context Model displays the high-level activities within the operation and relationships between them, whereas the IDEF0 Context Diagram shown earlier depicts the boundaries of the operation or activity and the interfaces between the operation or activity and other operations and activities with which it is associated.

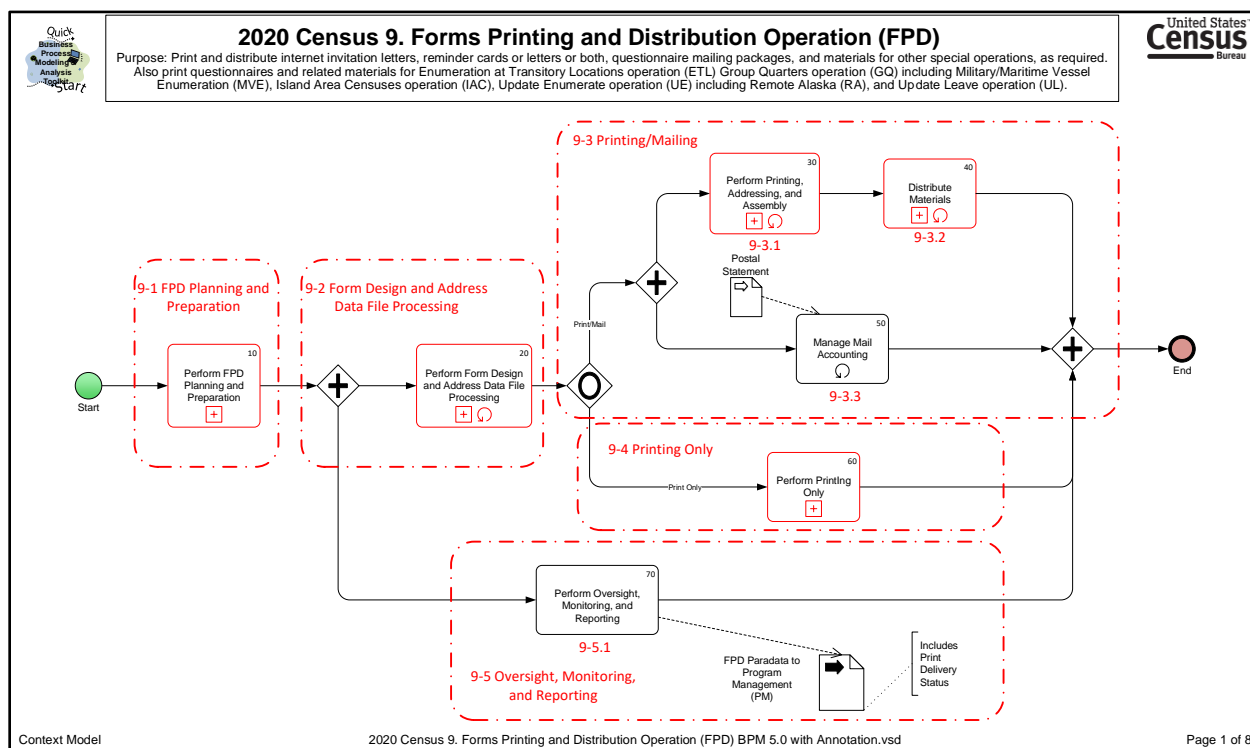


Figure 3: FPD Operation Context Model

The FPD operation is subdivided into the following activity areas:

- FPD Planning and Preparation [FPD 9-1].
- Form Design and Address Data File Processing [FPD 9-2].

- The business processes for each of these Level 1 activity areas are discussed along with their inputs and outputs in the following subsections.

Figure 4 shows the BPM for the FPD Planning and Preparation [FPD 9-1] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the FPD operation.



- FPD Planning and Preparation [FPD 9-1].
 - Develop FPD Strategy and Requirements for Contract Work [FPD 9-1.1].
 - Acquire Print Vendor Contractors and Coordinate Interface Activities [FPD 9-1.2].

FPD will work with partners and stakeholders to prepare solicitations to acquire needed printing and mailing capabilities. A detailed view of the constituent activities that make up the “FPD Planning and Preparation” operational subactivity is given in [Figure 5](#) below.

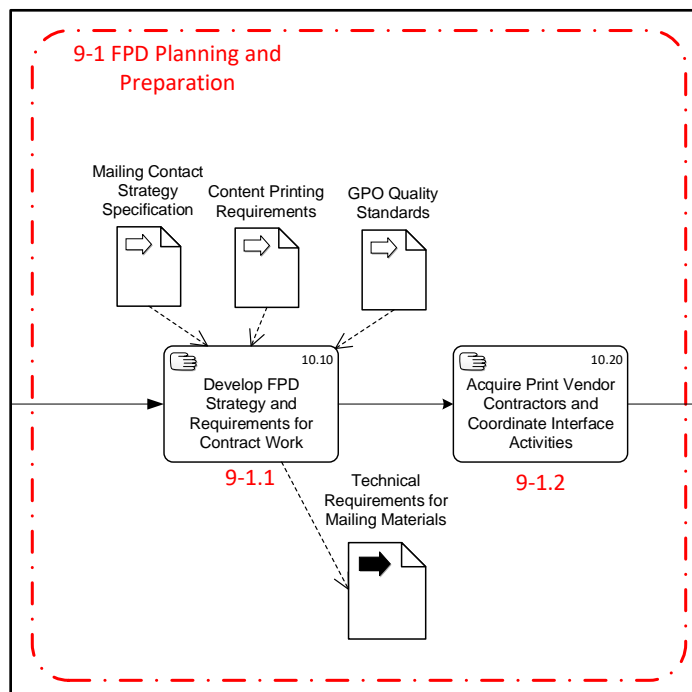


Figure 5: FPD Planning and Preparation Activity

Subsequent sections describe the “FPD Planning and Preparation” operational subactivities in detail.

3.1.1 Develop FPD Strategy and Requirements for Contract Work [FPD 9-1.1]

FPD will collaborate with: Internet Self-Response to determine contact (mail) strategy and timing; Paper Data Capture to establish specifications for questionnaires and associated mail materials including color, dimensions, variable imaging, and paper; Government Publishing Office (GPO) to determine industry capability and contract approach; Response Processing Operation (RPO) to determine address data delivery methods, timing, and formatting; and other operations needing printing support.

3.1.2 Acquire Print Vendor Contractors and Coordinate Interface Activities [FPD 9-1.2]

The GPO will assemble Census Bureau print and mailing requirements in the appropriate acquisition documentation, solicit bids, and make award determinations. FPD establishes lines of communication for technical interfaces needed during production cycles.

3.2 Form Design and Address Data File Processing [FPD 9-2]

Figure 6 shows the BPM for the Form Design and Address Data File Processing [FPD 9-2] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the FPD operation.

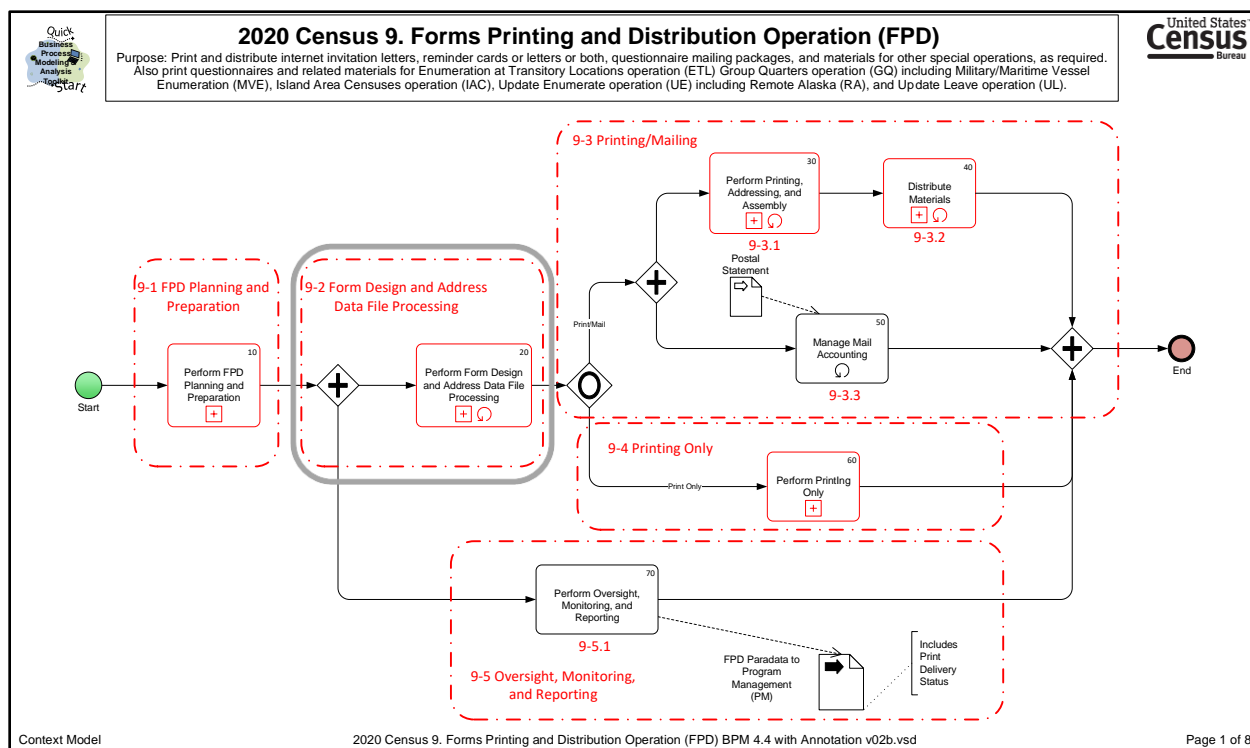


Figure 6: Form Design and Address Data File Processing [FPD 9-2] Constituent Activities

The Form Design and Address Data File Processing activity area is subdivided into the following operational subactivities:

- Form Design and Address Data File Processing [FPD 9-2].
 - Receive Paper Questionnaire and Mailing Materials Print Files from CFD [FPD 9-2.1].
 - Receive Mailing Workloads (Address Files) from RPO [FPD 9-2.2].

FPD will ensure the print vendor receives the necessary electronic print files for all printed materials requested as scheduled in the statement of work. Methods of delivery and formatting of address data files from RPO will be finalized with the vendor.

A detailed view of the constituent activities that make up the “Form Design and Address Data File Processing” operational subactivity is given in Figure 7 below.

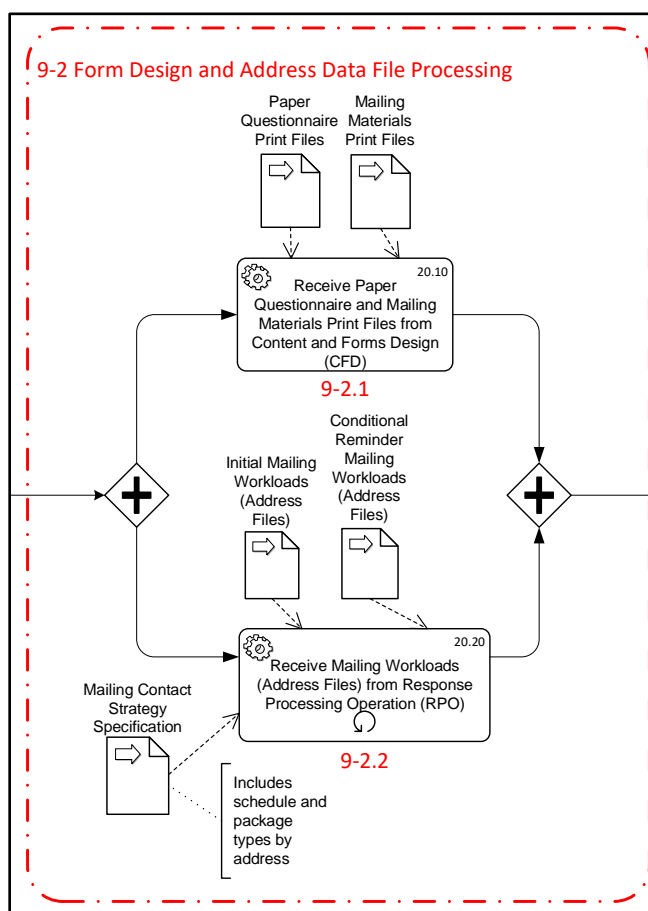


Figure 7: Form Design and Address Data File Processing Activity

Subsequent sections describe the “Form Design and Address Data File Processing” operational subactivities in detail.

3.2.1 Receive Paper Questionnaire and Mailing Materials Print Files from CFD [FPD 9-2.1]

Print files will meet GPO and commercial standards.

3.2.2 Receive Mailing Workloads (Address Files) from RPO [FPD 9-2.2]

The Census Bureau will provide a method to deliver address files in a specified format to the print vendor, who must ingest to the appropriate postal address processing systems.

3.3 Printing/Mailing [FPD 9-3]

Figure 8 shows the BPM for the Printing/Mailing [FPD 9-3] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the FPD operation.

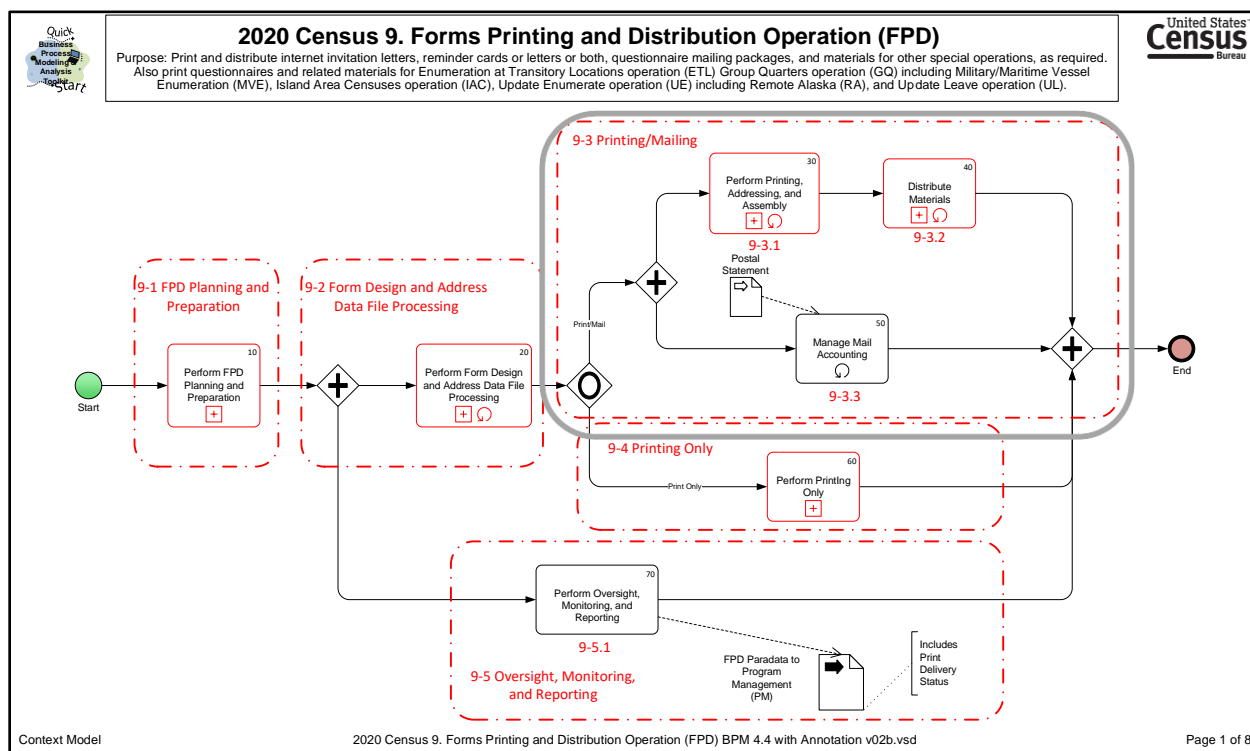


Figure 8: Printing/Mailing [FPD 9-3] Constituent Activities

The Printing/Mailing activity area is subdivided into the following operational subactivities:

- Printing/Mailing [FPD 9-3].
 - Perform Printing, Addressing, and Assembly [FPD 9-3.1].
 - Distribute Materials [FPD 9-3.2].
 - Manage Mail Accounting [FPD 9-3.3].

The print vendor will use appropriate methods to prepare address materials or address prepared material based on the timing and conditions of each mail contact. The vendor will work with USPS to ensure mail acceptance at the appropriate automation level and provide complete mail acceptance. Complete documentation of mail acceptance by USPS will be made available to the Census Bureau.

Subsequent sections describe the Printing/Mailing operational subactivities in detail.

3.3.1 Perform Printing, Addressing, and Assembly [FPD 9-3.1]

The “Perform Printing, Addressing, and Assembly” operational subactivity is subdivided into the following constituent activities:

- Perform Printing, Addressing, and Assembly [FPD 9-3.1].
 - Print Public Use Forms for HUs (for Self-Response) [FPD 9-3.1.1].
 - Process Address Files for Mailing [FPD 9-3.1.2].
 - Address Mail Pieces [FPD 9-3.1.3].
 - Assemble Mail Packages [FPD 9-3.1.4].
 - Prepare Distribution-Ready Products for USPS and/or Field Operations [FPD 9-3.1.5].

A detailed view of the constituent activities that make up the “Perform Printing, Addressing, and Assembly” operational subactivity is given in [Figure 9](#) below.

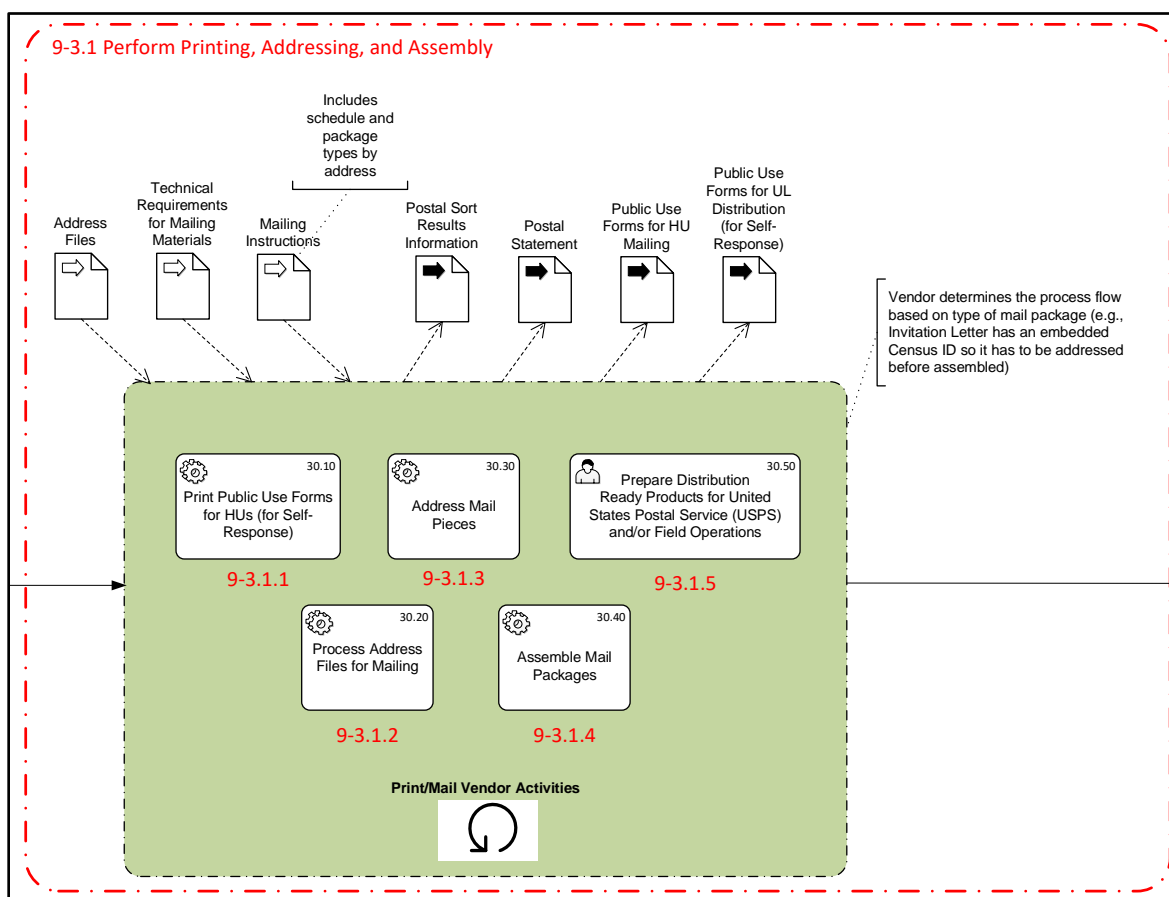


Figure 9: Perform Printing, Addressing, and Assembly Activity

Subsequent sections describe the Perform Printing, Addressing, and Assembly operational subactivities in detail.

Note that the activities are shown without a set of connecting flows since for various jobs, the vendor determines the process flow based on the type of mail package.

3.3.1.1 Print Public Use Forms for HUs (for Self-Response) [FPD 9-3.1.1]

A print vendor will receive HU self-response forms design files and address files as defined in contract milestones (Statement of Work) and will be required to establish a plan to print, finish, assemble, address, and prepare for USPS distribution appropriate for the mailing. A quantity of the printed HU self-response paper questionnaires and related mailing materials will need to be provided to NPC for use in EAE experimental mailings. In addition to printing the Public Use forms for HU mailing, plans will also be needed for printing the Public Use forms for Update Leave operation (UL) distribution. The order or combination of these print production steps is dependent on the timing of address data delivery. (For example, for the initial mailing where address files will be delivered months in advance, for efficiency the vendor would likely print any address materials in a single pass. Conditional mailing may not allow enough production time for assembly so the vendor will plan accordingly.)

3.3.1.2 Process Address Files for Mailing [FPD 9-3.1.2]

To receive the best postal rates, the vendor must use approved USPS software and processes to presort and prepare mail. Output from these processes will initialize IPTS to properly interpret postal tracing on other USPS data.

3.3.1.3 Address Mail Pieces [FPD 9-3.1.3]

Addresses are added to static mail materials using variable imaging. Materials addressed must maintain the postal processing order and organization.

3.3.1.4 Assemble Mail Packages [FPD 9-3.1.4]

Mail packages can include material such as questionnaires, letters, information inserts, and business reply envelopes. Assembly may be before or after addressing.

3.3.1.5 Prepare Distribution-Ready Products for USPS and/or Field Operations [FPD 9-3.1.5]

Mail materials are staged to meet postal acceptance requirements. Other materials are prepared as specified in the statement of work (this includes Public Use forms for UL distribution).

3.3.2 Distribute Materials [FPD 9-3.2]

The “Distribute Materials” operational subactivity is subdivided into the following constituent activities:

- Distribute Materials [FPD 9-3.2].
 - Distribute Materials to HUs via USPS [FPD 9-3.2.1].
 - Deliver Materials for Use by UL Operation [FPD 9-3.2.2].

A detailed view of the constituent activities that make up the “Distribute Materials” operational subactivity is given in [Figure 10](#) below.

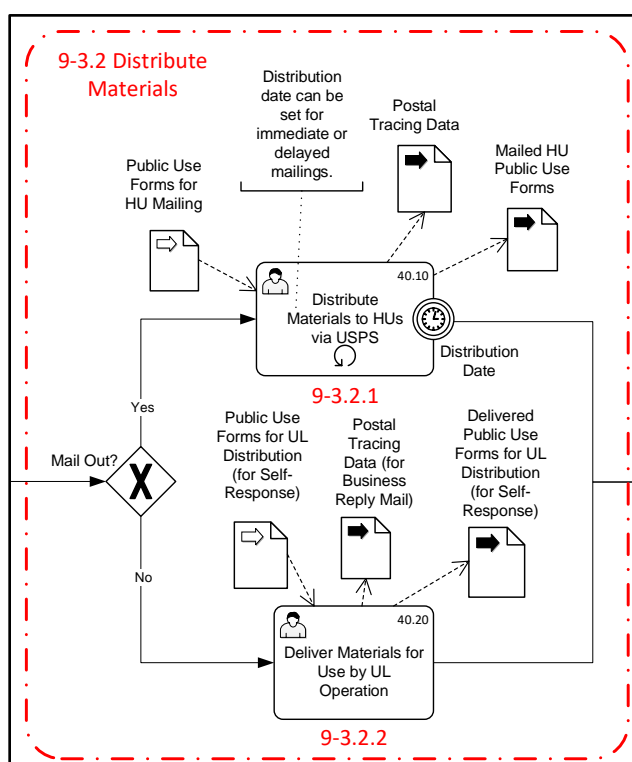


Figure 10: Distribute Materials Activity

Subsequent sections describe the Distribute Materials operational subactivities in detail.

3.3.2.1 Distribute Materials to HUs via USPS [FPD 9-3.2.1]

Mail is prepared and delivered following USPS first class standards.

3.3.2.2 Deliver Materials for Use by UL Operation [FPD 9-3.2.2]

Questionnaire packages are delivered in bulk to the DLM operation for subsequent use by the UL operation. Reminder materials are mailed to mailable addresses in the UL universe.

3.3.3 Manage Mail Accounting [FPD 9-3.3]

Electronic postage statements are delivered to Census Mail Management to reconcile postal charges.

3.4 Printing Only [FPD 9-4]

Figure 11 shows the BPM for the Printing Only [FPD 9-4] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the FPD operation.

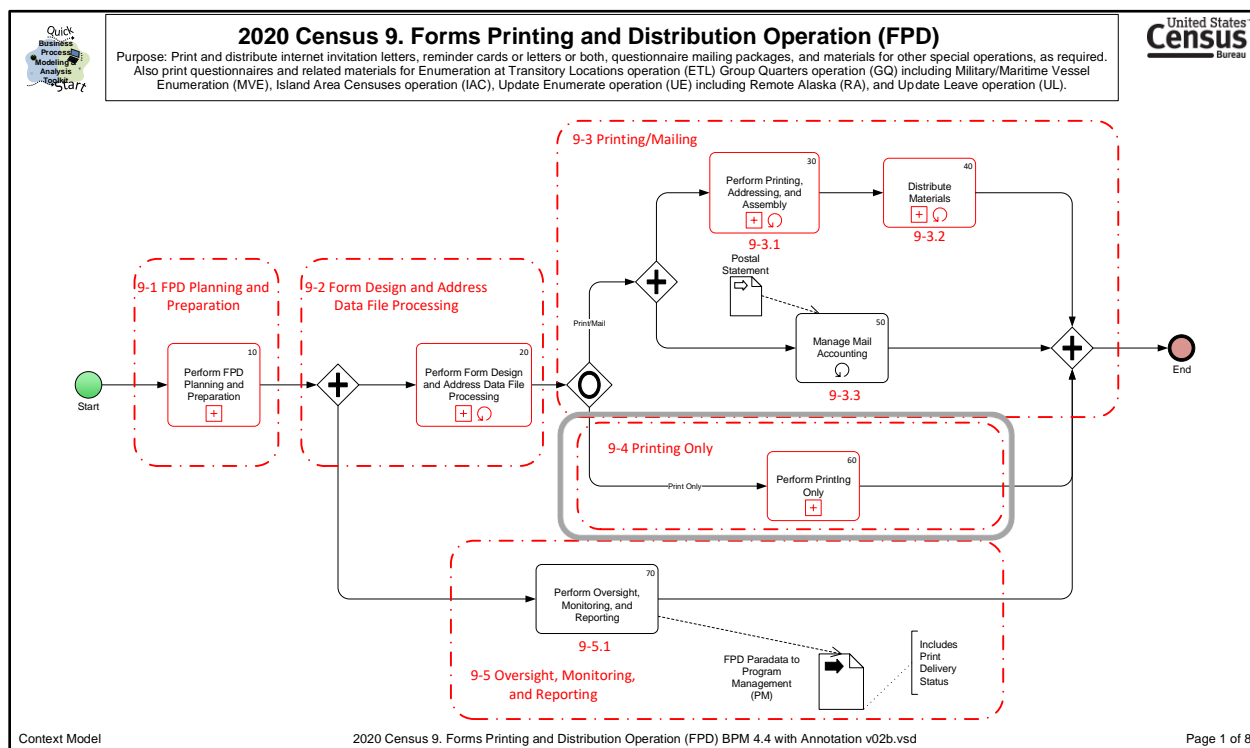


Figure 11: Printing Only [FPD 9-4] Constituent Activities

The Printing Only activity area is subdivided into the following operational subactivities:

- Printing Only [FPD 9-4].
 - Print Questionnaires and Associated Envelopes for Operations (ETL, GQ Including MVE, IAC, UE Including RA) [FPD 9-4.1].
 - Deliver Printed Materials for Use by the Operations (ETL, GQ Including MVE, IAC, UE Including RA) [FPD 9-4.2].

Printed questionnaires and related materials are delivered in bulk to DLM for use by field operations including Enumeration at Transitory Locations (ETL), Group Quarters (GQ) including Maritime/Military Vessel Enumeration (MVE), Island Areas Censuses (IAC), and Update Enumerate (UE) including RA (Remote Alaska). The questionnaires are serialized but not addressed.

A detailed view of the constituent activities that make up the “Printing Only” operational subactivity is given in [Figure 12](#) below.

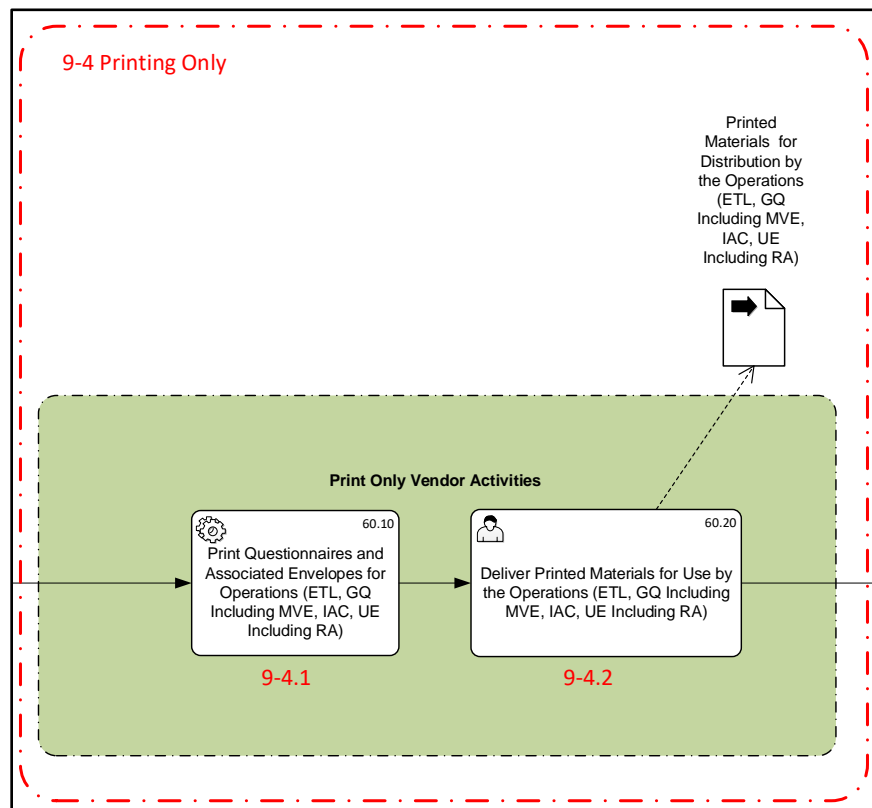


Figure 12: Printing Only Activity

Subsequent sections describe the “Printing Only” operational subactivities in detail.

3.4.1 Print Questionnaires and Associated Envelopes for Operations [FPD 9-4.1]

Questionnaires are printed to meet PDC requirements for ETL, GQ including Maritime/Military Vessel Enumeration (MVE), IAC, and UE including Remote Alaska (RA). Envelopes are printed to meet field operations’ needs.

3.4.2 Deliver Printed Materials for Use by the Operations [FPD 9-4.2]

The vendor must meet operations requirements for packing, palletization, and delivery to the DLM operation. The work includes printed materials for ETL, GQ including MVE, IAC, and UE including RA.

3.5 Oversight, Monitoring, and Reporting [FPD 9-5]

Figure 13 shows the BPM for the Oversight, Monitoring, and Reporting [FPD 9-5] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the FPD operation.

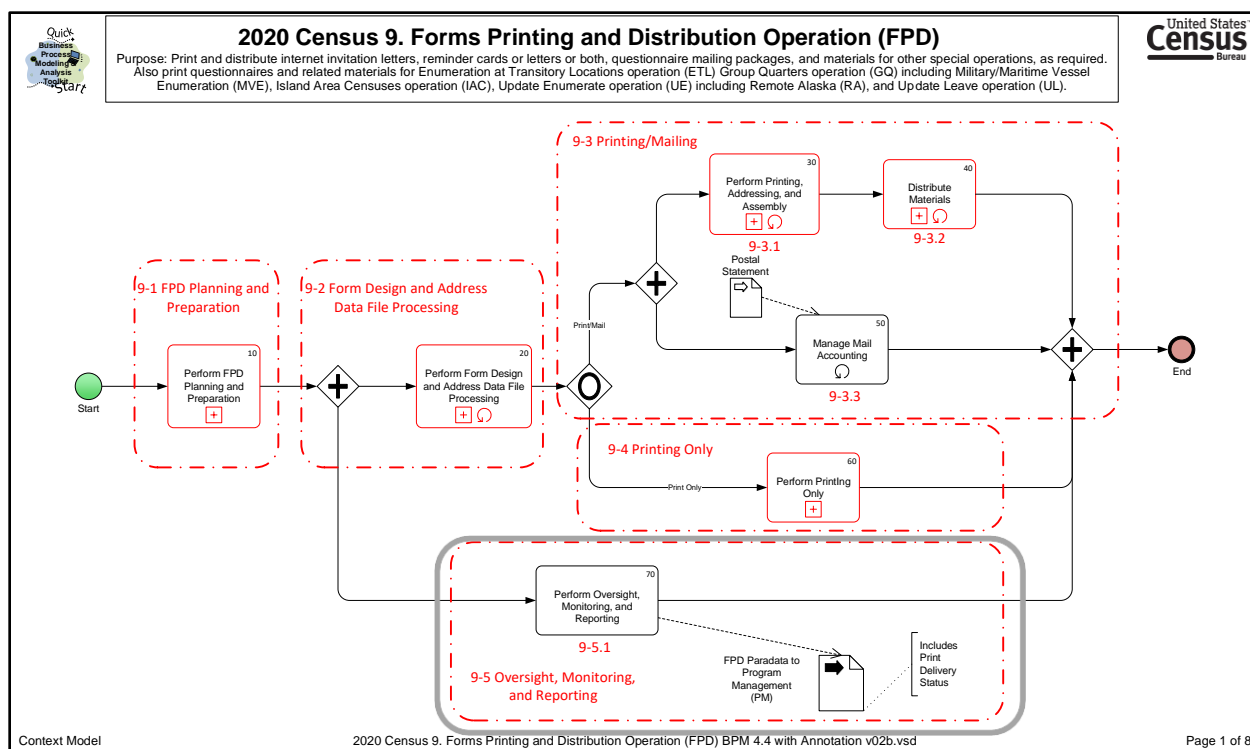


Figure 13: Oversight, Monitoring, and Reporting [FPD 9-5] Constituent Activities

3.5.1 Perform Oversight, Monitoring, and Reporting [FPD 9-5.1]

The print vendor is required to have a quality plan and program. The FPD, augmented by NPC staff, will monitor and review the vendor process and inspect materials to ensure compliance with contract and GPO standards.

4. Cost Factors

While the FPD operation is not a major cost driver for the 2020 Census, the following mechanisms from the IDEF0 Context Diagram represent the resources used to support this operation and comprise part of the 2020 Census cost elements:

Staff

- Census Headquarters (HQ) Staff.
- Government Publishing Office (GPO) HQ Staff.
- National Processing Center (NPC) Staff.
- Print Vendors' Staff.

Sites

- Census HQ.
- GPO HQ.
- Print Vendors' Sites.

Systems

- IPTS.
- Other Bureau Systems (e.g., production tracking and reporting).

Other

- HQ Office Information Technology (IT) Infrastructure.
- Census Networks.

Additional cost elements of note are postage costs (USPS) and printing costs (contractor).

5. Measures of Success

For the 2020 Census operations, the corresponding Measures of Success will be documented in the operational assessment study plans and final reports. The operational assessment study plan documents the criteria that will be used to define successful completion of the operation. The operational assessment report will provide results on whether the criteria were met.

In general, operational assessments report on planned to actual variances in budget, schedules, and production and training workloads. The corresponding Measures of Success (as documented in the operational assessment study plan) include variances that exceed established thresholds. See *Preparing for the 2020 Census Operational Assessment Study Plan* for the potential scope of assessment.

Types of success measures include:

- **Process Measures** that indicate how well the process works, typically including measures related to completion dates, rates, and productivity rates.
- **Cost Measures** that drive the cost of the operation and comparisons of actual costs to planned budgets. Costs can include workload as well as different types of resource costs.
- **Measures of the Quality** of the results of the operation, typically including things such as rework rates, error rates, and coverage rates.

See the corresponding operational assessment study plan and report for the Forms Printing and Distribution operation (FPD) for details on the measures of success.

Appendix A – Acronyms and Terminology

Table 7 lists the acronyms and abbreviations used within this Detailed Operational Plan document.

Table 7: Acronyms and Abbreviations List

Acronym	Meaning
AdRecs	Administrative Records
BCU	Basic Collection Unit
BPM	Business Process Model
BPMN	Business Process Model and Notation
CDL	Census Data Lake
CEF	Census Edited File
CFD	Content and Forms Design operation
CI	Coverage Improvement
CQA	Census Questionnaire Assistance operation
CRO	Count Review Operation
CT	Census Test
CUF	Census Unedited File
DSC	Decennial Service Center operation
DLM	Decennial Logistics Management operation
DOP	Detailed Operational Plan
DPD	Data Products and Dissemination operation
DRF	Decennial Response File

Acronym	Meaning
E2E	End-to-End
EAE	Evaluations and Experiments operation
ETL	Enumeration at Transitory Locations operation
FLDI	Field Infrastructure operation
FPD	Forms Printing and Distribution operation
GDP	Geographic Data Processing
GEOP	Geographic Programs operation
GQ	Group Quarters operation
GPO	Government Publishing Office
HQ	Headquarters
HU	Housing Unit
IA	Island Areas
IA-CEF	Island Areas Census Edited File
IA-CUF	Island Areas Census Unedited File
IA-MDF	Island Areas Master Delivery File
IAC	Island Areas Censuses operation
ID	Identification
IDEF0	Integrated Definition Level 0
IE	Information Exchange
IOD	Integrated Operations Diagram
IMb®	Intelligent Mail® barcode

Acronym	Meaning
IPT	Integrated Project Team
IPTS	IMb® Postal Tracking System
IT	Information Technology
ITIN	IT Infrastructure operation
ISR	Internet Self-Response operation
LUCA	Local Update of Census Addresses operation
MAF	Master Address File
MDF	Microdata Detail File
MVE	Maritime/Military Vessel Enumeration
MMAR	Material Management Acquisition Regulation
NID	Non-ID Processing operation
NPC	National Processing Center
NRFU	Nonresponse Followup operation
OSR	Optimizing Self-Response
PDC	Paper Data Capture operation
PM	Program Management operation
PR	Puerto Rico
QC	Quality Control
RA	Remote Alaska
RI	Reinterview
RPO	Response Processing Operation

Acronym	Meaning
SPC	Security, Privacy, and Confidentiality operation
SR	Self-Response
TEA	Type of Enumeration Area
UE	Update Enumerate operation
UL	Update Leave operation
USC	United States Code
USPS	United States Postal Service

Appendix B – References

Appendix B lists the documents or other resources used during the development of this Detailed Operational Plan document.

U.S. Census Bureau (2018), "[2020 Census Operational Plan](#)," Version 4.0, December 31, 2018.

U.S. Census Bureau (2016), "Preparing for the 2020 Census Operational Assessment Study Plan," Draft, May 10, 2018.

Appendix C – Activity Tree for Forms Printing and Distribution Operation (FPD)

This appendix presents the Activity Tree for the FPD operation. An Activity Tree uses an outline structure to reflect the decomposition of the major operational activities in the operation. Each activity is numbered according to its position in the outline. For example, for the current operation numbered “9,” the first activity would be numbered 9-1. Subactivities under this activity would be numbered sequentially, starting again with the number one. For example, the first subactivity under the first activity would be numbered 9-1.1 the second subactivity as 9-1.2. The second activity would be numbered 9-2, and so on.

FPD Activity Tree:

- 9-1 FPD Planning and Preparation
 - 9-1.1 Develop FPD Strategy and Requirements for Contract Work
 - 9-1.2 Acquire Print Vendor Contractors and Coordinate Interface Activities
- 9-2 Form Design and Address Data File Processing
 - 9-2.1 Receive Paper Questionnaire and Mailing Materials Print Files from CFD
 - 9-2.2 Receive Mailing Workloads (Address Files) from RPO
- 9-3 Printing/Mailing
 - 9-3.1 Perform Printing, Addressing, and Assembly
 - 9-3.1.1 Print Public Use Forms for HUs (for Self-Response)
 - 9-3.1.2 Process Address Files for Mailing
 - 9-3.1.3 Address Mail Pieces
 - 9-3.1.4 Assemble Mail Packages
 - 9-3.1.5 Prepare Distribution-Ready Products for USPS and/or Field Operations
 - 9-3.2 Distribute Materials
 - 9-3.2.1 Distribute Materials to HUs via USPS
 - 9-3.2.2 Deliver Materials for Use by UL Operation
 - 9-3.3 Manage Mail Accounting
- 9-4 Printing Only
 - 9-4.1 Print Questionnaires and Associated Envelopes for Operations (ETL, GQ Including MVE, IAC, UE Including RA)
 - 9-4.2 Deliver Printed Materials for Use by the Operations (ETL, GQ Including MVE, IAC, UE Including RA)
- 9-5 Oversight, Monitoring, and Reporting
 - 9-5.1 Perform Oversight, Monitoring, and Reporting